

Translation of the pertinent portions of an International Preliminary Examination Report, mailed 02/28/2005

2. This report comprises a total of 7 pages, including the cover page. Attachments have also be provided.

3. This report contains information regarding the following items:

- I Basis of the Report
- IV Lack of Unity of the Invention
- V Reasoned Determination under Rule 66.2 a)ii)

I Basis of the Report

1. Regarding the contents of the International Application

Specification, pages

5 to 27	in the originally filed version
1, 2, 2a	received 12/09/2004 with letter of 12/06/2004

Claims, nos.

1 to 46	received 12/09/2004 with letter of 12/06/2004
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Drawings, pages

1/14 to 14/14	in the originally filed version
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IV Lack of Unity of the Invention

2. The Office has determined that the requirement for unity of the invention has not been met and, in accordance with Rule 68.1 has decided not to request Applicant to limit the claims or to pay additional fees.

3. The Office is of the opinion that the requirement for unity of the invention in accordance with Rules 13.1, 13.2 and 13.3

has not been met for the following reasons:

see the attached sheet

4. Therefore an International Preliminary Examination was prepared for the following portions of the international application

the portions relating to claims 1 to 3, 5 to 40.

V Reasoned Determination under Article 35(2)

1. Determination

Novelty	Yes: Claims 1-3, 5-40
	No: Claims

Inventive Activities	Yes: Claims 1-3, 5-40
	No: Claims

Commercial Applicability	Yes: Claims 1-3, 5-40
	No: Claims

2. References and Explanations

see attached sheet

International Preliminary Examination Report

Attached sheet

Re.: Item IV

Claim 4, as well as claims 42 to 46

This international office has determined that the international application contains several inventions or groups of inventions, which are not connected by a single common inventive idea (Rule 13.1 PCT), namely:

I: Claims 1, 2, 13

Devices with at least two web processing tools, wherein the web processing tools each have a mechanically independent drive mechanism, which are in a logical functional connection with a common control device,

II: Claim 4

Device with three formers, wherein the outer ones are displaced in case of a change of the web width, while the center one remains in place,

III: Claims 42 to 46

A method for setting web processing tools prior to the start of production by means of presetting values.

The method claims 42 to 46 are not specifically directed to the devices of claims 1 to 41 and therefore no technical connection exists within the meaning of Rule 13.2 PCT, which is expressed in one or several identical or corresponding special technical characteristics. In the same way a technical connection between the special technical characteristics of claim 4 and those of the first group of claims is lacking.

Therefore there is no unity of the invention in accordance with Rules 13.1 and 13.2 PCT between the mentioned groups (I to III) of claims, neither in regard to special technical characteristics nor in regard to objects attained.

Therefore only the first group of claims is examined in this notification.

Re.: Item V

Reference is made to the following document:

D1: DE-A-100 03 025

Claims 1, 2 and 13

D1 discloses a device for processing a web, having at least two web processing tools (former, cutters, folding rollers), wherein the tools can be moved transversely in respect to the running direction of the web by means of an actuating member.

The subject of claims 1, 2 and 13 differs from the device of D1 in that the tools can each be moved by means of an individual mechanically independent drive mechanism, and that their drive mechanisms are in a logical functional connection with a common control device.

It is the object of the invention to create a device for processing a web, wherein the setting thereof is simplified.

The attainment is recited in the characterizing portion of claims 1, 2 and 13, wherein each of the tools has an independent drive mechanism which, however, is in a logical functional connection with a common control device. Because of this a rapid adaptation to a change of the web widths to be processed is made possible, since a user does not need to activate each individual web processing tool which must be displaced to match the web width. No suggestion of such a solution can be found in the prior art.

As a result, the subject of claims 1, 2 and 13 should meet the requirements of Articles 33(2) and 33(3) PCT.

Claims 3, 7 to 12 and 14 to 40

The dependent claims (depending from claims 1, 2 and 13) merely relate to particular embodiments of the invention which, together with the above mentioned independent claims 1, 2 and 13, also meet the criteria of Articles 33(2) and 33(3) PCT.

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Specification

Devices for Processing and/or Conveying a Web as Well as
Methods for Their Regulation

The invention relates to devices for processing and/or conveying a web, as well as to methods for their regulation in accordance with claims 1, 2 or 13, or 42, 43 or 44.

A device for longitudinal cutting of foils and tapes is known from EP 1 238 935 A2, wherein an upper cutter can be positioned transversely to the transport direction of the web for setting a cutting width.

A roll changer is known from DE 101 50 810 A1, wherein two roll arms form a pair for receiving a roll, each of which can be individually moved by its own motor along an axis of rotation of the roll.

DE 196 02 248 A1 discloses a former which, for the lateral control of the folded continuous web, can be moved along an inlet gap between two downstream located rollers.

A turning bar, which can be positioned transversely to the incoming direction of the web, and a register roller, which can be positioned along the incoming direction of the web, are known from WO 01/70608. The turning bar is pivotable in such a way that it provides directional changes toward the right or the left, depending on its position.

DE 36 14 981 C2 discloses two web edge sensors, each of which has a drive mechanism and is controlled by a common control device. DE 35 33 274 C3 discloses a similar device.

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A transport direction with two side-by-side arranged conveying devices for endless material is shown in DE 195 40 164 C1, wherein each device has an axially movable advancement arrangement.

An arrangement by means of which it is possible to cut two partial webs or three partial webs of variable width out of a running paper web of maximum width and to fold these partial webs is known from DE 42 04 254 A1. The arrangement shown there includes three formers arranged at two levels, wherein two formers which adjoin each other at a first level are arranged to be displaceable transversely to the running direction of the paper web in order to be selectively used for folding both partial webs of a paper web divided into two, or for folding the two outer partial webs of a paper web divided into three. A matching of other web-conducting devices except for the formers to the respective web width is not provided.

A turning bar arrangement is known from DE 43 11 437 A1, whose turning bars can be shifted for displacing a web which has been turned by them over its width toward the left or the right, depending on the position of the turning bars. This turning bar arrangement cannot be easily combined with the arrangement of DE 42 04 254 A1, since a partial web divided into three and which is displaced by half a web width, does not meet the former for which it is destined.

DE 100 03 026 C1 discloses a device for processing a web, having at least one former and a cutter arranged upstream of it, wherein the cutter and the former can be moved transversely to the running direction of the web by

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means of a common actuating member.

Web processing elements or web guide elements embodied as turning bars, as longitudinal cutters and as a registration roller are disclosed in USP 3,734,487, which can be prepositioned by means of individual drive mechanisms in regard to a planned production run.

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EP 0 457 304 A1 relates to a mechanism of a device for folding pockets, having two processing elements which can be moved in opposite directions by a common drive mechanism.

The object of the invention is based on providing devices for processing and/or conveying a web, as well as methods for their regulation.

In accordance with the invention, this object is attained by the characteristics of claims 1, 2 or 13, or 42, 43 or 44.

A substantial advantage to be obtained by means of the device or the method rests on the one hand in that an

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Claims

1. A device for processing and/or conveying a web in a machine which works on a web and/or processes a web, having at least one web processing tool (06, 07, 05, 28, 32) embodied as a former (06, 07), or as a cutter (05, 28, 32) arranged on the web path upstream of the latter, wherein the cutter (05, 28, 32) and the former (06, 07) are movable by at least one actuating member (08, 11, 34) transversely to the running direction of the web of material (01, 02, 26, 36), characterized in that a turning bar unit (72) with at least one turning bar (37, 38) is arranged upstream of the former (06, 07), the turning bar (37, 38) and the former (06, 07) can be moved transversely in respect to the running direction of the web of material (01, 02, 26, 36) by drive mechanisms (11, 49) which are respectively mechanically independent of each other, and that the drive mechanism (11) of the former (06, 07) and the drive mechanism (49) of the turning bar (37, 38) are in a logical functional connection with a common control device (10, S).

2. A device for processing and/or conveying a web in a web-fed rotary printing press, having at least one web processing tool (06, 07, 05, 28, 32) embodied as a former (06, 07), or as a cutter (05, 28, 32) arranged on the web path upstream of the latter, wherein the cutter (05, 28, 32) and the former (06, 07) are movable by at least one actuating member (08, 11, 34) transversely to the running direction of the web of material (01, 02, 26, 36), characterized in that

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the cutter (28, 32) is embodied as a cutter (28, 32) of a longitudinal cutting arrangement (71) arranged upstream of the former (06, 07), which has a lateral drive mechanism (34) which is mechanically independent of a drive mechanism (11) of the former (06, 07), that the longitudinal cutting arrangement (71) has at least two cutters (28), which are spaced apart from each other transversely to the web running direction and can be moved in relation to each other by a common drive mechanism (34) transversely in respect to the web, but in opposite directions, and that the drive mechanism (11) of the former (06, 07) and the drive mechanism (34) of

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the cutter (28, 32) are in a logical functional connection with a common control device (10, S).

3. The device in accordance with claim 1, characterized in that the former (06, 07) and the cutter (05, 28, 32) are arranged on a common stand (15) and can be moved by means of a common drive mechanism (11).

4. A device for processing and/or conveying a web in a machine which works on a web and/or processes a web, having at least one web processing tool (06, 07, 30) embodied as a former (06, 07), and with a web processing tool (06, 07, 30) embodied as a motor driven roller (30) arranged on the web path downstream of the latter, characterized in that two outer and one central former (06, 07) are provided, wherein in case of a change of the width of the partial webs the two outer formers (06, 07) can be displaced and the center one remains in place, and that the displaceable former (06, 07) and the assigned roller (30) are movable by at least one actuating member (08, 11) transversely to the running direction of the web of material (01, 02, 26, 36).

5. The device in accordance with claim 4, characterized in that the former (06, 07) and the roller (30) are arranged on a common stand (15) and can be moved by means of a common drive mechanism (11).

6. The device in accordance with claim 4, characterized in that a cutter (05, 28, 32), arranged

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upstream of the former (06, 07), and the former (06, 07) can be moved by at least one actuating member (08, 11, 34) transversely to the running direction of the web of material (01, 02, 26, 36).

7. The device in accordance with claim 1 or 6, characterized in that the cutter (28, 32) is embodied as a cutter (28, 32) of a longitudinal cutting arrangement (71) arranged upstream of the former (06, 07), which has a lateral drive mechanism (34) which is mechanically independent of a drive mechanism (11) of the former (06, 07).

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8. The device in accordance with claim 7, characterized in that the drive mechanism (11) of the former (06, 07) and the drive mechanism (34) of the cutter (28, 32) are in a logical functional connection with a common control device (10, S).

9. The device in accordance with claim 1, 2 or 7, characterized in that a turning bar unit (72) with at least one turning bar (37, 38) is arranged upstream of the former (06, 07).

10. The device in accordance with claim 7 and 9, characterized in that the longitudinal cutting arrangement (71) is placed upstream of the turning bar unit (72).

11. The device in accordance with claim 9, characterized in that the turning bar (37, 38) and the former (06, 07) can be moved transversely in respect to the running direction of the web of material (01, 02, 26, 36) by drive mechanisms (11, 49) which are respectively mechanically independent of each other.

12. The device in accordance with claim 11, characterized in that the drive mechanism (11) of the former (06, 07) and the drive mechanism (49) of the turning bar (37, 38) are in a logical functional connection with a common control device (10, S).

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13. A device for processing and/or conveying a web in a machine which works on a web and/or processes a web, having a longitudinal cutting arrangement (71) with at least one web processing tool (28, 32) embodied as a cutter (28, 32), as well as a turning bar unit (72) arranged downstream thereof on the web path and having at least one web processing tool designed as a turning bar (37, 38), characterized in that the cutter (28, 32) and the turning bar (37, 38) can be moved transversely in respect to the running direction of the web of material (01, 02, 26, 36) by drive mechanisms (34, 49), which are respectively independent of each other, that the longitudinal cutting arrangement (71) has at least two cutters (28), which are spaced apart from each other transversely to the web running direction, which can be

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moved by a common drive mechanism (34) transversely in respect to the web, but in opposite directions in regard to each other, and that the drive mechanism (34) of the cutter (28) and the drive mechanism (49) of the turning bar (37, 38) are in a logical functional connection with a common control device (10, S).

14. The device in accordance with claims 7 or 10, characterized in that the longitudinal cutting arrangement (71) has at least two cutters (28), which are spaced apart from each other transversely to the web running direction and can be moved in relation to each other by a common drive mechanism (34) transversely in respect to the web, but in opposite directions.

15. The device in accordance with claims 9, 10 or 13, characterized in that the turning bar unit (72) has at least two turning bars (37, 38), which are spaced apart from each other transversely in relation to the web running direction of an incoming web and which can be moved transversely in respect to the web by means of a common drive mechanism (49).

16. The device in accordance with one or several of claims 8 or 12, characterized in that the logical functional connection is designed in such a way that the setting of the drive mechanisms (11, 34, 49) can take place in a common work step, in particular in the course of a setting process, as a result of a program flow.

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17. The device in accordance with one or several of claims 8, 12, 13 or 16, characterized in that the control device (10, S) is designed to determine a suitable desired position of the respective web processing tool (05, 06, 07, 28, 30, 32, 37, 38) from information regarding the web width and/or an intended web path, and to act on the respective drive mechanism (11, 34, 49).

18. The device in accordance with one or several of claims 8, 12 or 13, characterized in that the control unit

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(10, S) comprises a user interface for entering and/or reading in the width of a web (01, 02, 12, 13, 26, 36, 51, 52, 53, 54) to be processed, computing means for determining a desired position of the movable web processing tool (05, 06, 07, 16, 28, 30, 32, 37, 38) by means of the web width, as well as drivers for triggering the drive mechanisms (11, 23, 34, 49) for setting the respectively determined desired position.

19. The device in accordance with one or several of claims 8, 12, 13 or 16, characterized in that several drive mechanisms (11, 23, 34, 49) are triggered by the common control unit (10, S).

20. The device in accordance with one of the preceding claims, characterized in that at least two formers (06, 07) are provided, at least one of which can be moved transversely.

21. The device in accordance with one of the preceding claims, characterized in that at least two web processing tools (16), which roll off on a cylinder (03) and are designed as rollers (16), at least one of which can be moved transversely, are provided for pressing the web of material against the cylinder (03).

22. The device in accordance with claim 21, characterized in that the rollers (16) are interceptor rollers (16) or traction rollers (16).

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23. The device in accordance with one of the preceding claims, characterized in that the cutter (28, 32) is designed for the continuous longitudinal cutting of the web (26, 36) of material.

24. The device in accordance with one of the preceding claims, characterized in that the cutter (05) is designed as an interval cutter (05) for longitudinally cutting the web (01, 02, 12, 13) into lengths of a page.

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25. The device in accordance with one of the preceding claims, characterized in that at least one transversely movable roll arm of a roll changer is provided as a further web processing tool to be set.

26. The device in accordance with one of the preceding claims, characterized in that at least one transversely movable sensor device for the cutting registration is provided as a further web processing tool to be set.

27. The device in accordance with one of the preceding claims, characterized in that at least one transversely movable sensor device for the color registration is provided as a further web processing tool to be set.

28. The device in accordance with one of the preceding claims, characterized in that at least one transversely movable web edge regulating device is provided as a further web processing tool to be set.

29. The device in accordance with one of the preceding claims, characterized in that at least one transversely movable paddle wheel is provided as a further web processing tool to be set in the outlet of a folding apparatus.

30. The device in accordance with one of the preceding claims, characterized in that at least one transversely movable gluing nozzle of a gluing device is provided as a further web processing tool to be set.

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31. The device in accordance with one of the preceding claims, characterized in that at least one transversely movable device for forming a second longitudinal fold is provided as a further web processing tool to be set.

32. The device in accordance with one of the preceding claims, characterized in that at least one transversely

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movable device for longitudinal perforation is provided as a further web processing tool to be set.

33. The device in accordance with one of the preceding claims, characterized in that at least one actuating member (08, 11, 22, 23, 33, 34, 48, 49) has a rotatable threaded spindle (08, 22, 33, 48), and that every displaceable web processing tool (05, 06, 07, 16, 28, 30, 32, 37, 38) is in engagement with the threaded spindle (08, 22, 33, 48).

34. The device in accordance with claim 33, characterized in that every displaceable web processing tool (05, 06, 07, 16, 28, 30, 32, 37, 38) coupled to the actuating member (08, 11, 22, 23, 33, 34, 48, 49) has a sliding block (09, 18, 19, 21, 42, 43, 44, 46), which is in engagement with the threaded spindle (08, 22, 33, 48).

35. The device in accordance with claim 33 or 34, characterized in that several displaceable web processing tools (06, 07, 16, 28, 37, 38) of the same type are in engagement with an identical threaded spindle (08, 22, 33, 48).

36. The device in accordance with claim 35, characterized in that the threaded spindle (08, 22, 33, 48) has several sections rotating in different directions, and that at least one of the web processing tools (06, 07, 16, 28, 37, 38) is in engagement with each section.

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37. The device in accordance with one of claims 33 to 36, characterized in that the threaded spindle (08, 22, 33, 48) is rotatingly driven by an electric motor (11, 23, 34, 49) controlled by the control unit (10, S).

38. The device in accordance with one of claims 33 to 37, characterized in that threaded spindle (08, 22, 33, 48)

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has several sections of different gradients, and that at least one of the web processing tools (06, 07, 16, 28, 37, 38) is in engagement with each section.

39. The device in accordance with claim 1, 2 or 4, characterized in that the former (06, 07) and a roller (03) having a groove (25) can be moved together.

40. The device in accordance with claims 2, 7 or 13, characterized in that the drive mechanisms (11, 23, 34, 49) can be triggered by means of a common control unit (10, S) in regard to positioning the respective web processing tool (06, 07, 05, 28, 30, 32, 37, 38) in respect to the web.

41. A method for setting web processing tools of a machine which works on a web and/or processes a web, having a former (06, 07) and an upstream arranged cutter (28, 32) for a longitudinal cut of the web, characterized in that prior to the start of a production run the actual position of the cutter (28, 32) and of the former (06, 07) in regard to presetting values required for the planned production run are checked by a system (S), and/or presetting is performed by the system (S) acting on the drive (11) of the former (06, 07), as well as the drive mechanism (34) of the cutter (28, 32).

42. A method for setting web processing tools of a machine which works on a web and/or processes a web, having a former (06, 07) and an upstream arranged turning bar (37,

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38), characterized in that prior to the start of a production run the actual position of the turning bar (37, 38) and of the former (06, 07) in regard to presetting values required for the planned production run are checked by a system (S), and/or presetting is performed by the system (S) acting on the drive (11) of the former (06, 07), as well as the drive mechanism (49) of the turning bar (37, 38).

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43. A method for setting web processing tools of a machine which works on a web and/or processes a web, having a cutter (28, 32) for longitudinal cutting of the web and a downstream arranged turning bar (37, 38), characterized in that prior to or during the start of the production run the actual position of the cutter (28, 32) and of the former (06, 07) in regard to presetting values required for the planned production run are checked by a system (S), and/or presetting is performed by the system (S) acting on the drive (11) of the former (06, 07), as well as the drive mechanism (34) of the cutter (28, 32).

44. The method in accordance with claim 42, characterized in that presetting is also performed by the system (S) acting on a drive mechanism (34) of a cutter (28, 32) arranged upstream of the turning bar (37, 38).

45. The method in accordance with one or several of claims 41 to 44, characterized in that presetting is also performed by the system (S) acting on a drive mechanism of a longitudinal registration arrangement placed downstream of the drive mechanism of the turning bar (37, 38).

46. The method in accordance with one or several of claims 41 to 44, characterized in that presetting is also performed by the system (S) acting on the drive mechanism of at least one roll arm of a roll changer.